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THE MARSH OR RICE-FIELD MICE OF THE EASTERN UNITED STATES.

S. N. RHOADS.

THE status of the rice-field mice (*Oryzomys*) found in the marshes of the Atlantic coast from Delaware Bay to the Gulf of Mexico has been of uncertain fixity since our first knowledge of their existence in 1837.

In that year a certain Rev. Dr. Harlan of the Academy of Natural Sciences of Philadelphia is stated by the Rev. John Bachman to have used the skull of one of these mice, sent by him for identification to the Academy, as the basis of the first description of the species, published in *Silliman's Journal*. The name there given was *Mus palustris*, and the professed type a specimen in the Academy's collection labeled as coming from "Fast Land," near Salem, N. J. Until recently no other specimens had been secured in New Jersey, and naturalists had so far concluded that the animal was never found there that Mr. Outram Bangs, in a recent paper on the mammals of Florida and Georgia (*Proc. Bost. Soc. Nat. Hist.*, p. 188, 1898), decided to ignore Harlan's statement as to the type locality and refer it to South Carolina, whence the Bachman specimens were procured. But recent investigations, based on the chance rediscovery of this interesting mouse in the coast marshes of Cumberland County, N. J., as announced two years ago by Mr. Witmer Stone, have enabled the writer to secure a sufficient series of specimens of Harlan's typical *O. palustris* to settle some points in this controversy, as indicated in the following brief synopsis.

1. Harlan's marsh mouse, *Oryzomys palustris* (Harlan).

1836 *Mus palustris* Harlan. *Silliman's Amer. Journ. Sci.* Vol. xxxi, p. 386.

Type locality: "Fast Land" (a term having no meaning to present inhabitants except as applied to upland, or land not needing reclamation from tides). near Salem, N. J.

Geographic distribution (of *palustris*, typicus): Southern New Jersey to northeastern South Carolina.

Habitat: Tide marshes of the coast, inland to the limits of brackish water. Wintering in muskrat houses in New Jersey.

Description of species: Size, smallest of the Atlantic coast group. Skull, relatively large and massive. Colors, above grayish black with pale tawny or ashy suffusion. Underparts wholly grayish white. Fur dense and soft. Average measurements of ten old adults from New Jersey and North Carolina: total length, 237 mm.; tail vertebræ, 108 mm.; hind foot, 29 mm.; ear from crown, 12 mm. Skulls of two old males, total length (basilar, of Hensel), 37 mm.; zygomatic width, 18 mm.

2. Bachman's marsh or rice mouse, *Oryzomys palustris oryzivorus* (Bachman).

1853 *Arvicola oryzivora* Bachman. *Quad. N. Amer.* Vol. iii. p. 214.

1893 *Oryzomys palustris natator* Chapman. *Bull. Amer. Mus. Nat. Hist.* Vol. v, pp. 43-48.

1894 *Oryzomys palustris texensis* Allen. *Bull. Amer. Mus. Nat. Hist.* Vol. vi, pp. 177-179.

Type locality: Southeastern South Carolina, between Charleston and Savannah, Ga.

Geographic distribution: Northeastern South Carolina to Orange and Citrus Counties, Florida, Gulf coast to southern Texas.

Habitat: Same as *palustris*, but penetrating farther inland to fresh water.

Description of species: Compared with *palustris* of New Jersey and northern North Carolina (Bertie County) the differences of Georgia and north Florida specimens, alike typical of *oryzivorus* and *natator*, are too slight to allow of the recognition of both the latter-named races. In fact, no palpable departure from *palustris* is manifest until north Florida specimens are examined. As the *natator* form is thus synonymous from an anatomic and zoögeographic standpoint with Bachman's type, I am forced to so consider it in this review.

Oryzivorus, as thus restricted, may be distinguished from *palustris* by somewhat larger size, a relatively much lengthened tail, and a narrower skull. It is a more slender, elongate animal. The colors of upper parts are browner (less gray) than *palustris*, the subapical third of the hairs of back and sides being pale ochraceous brown instead of pale tawny. The buffy shade invades the underparts and gives a slightly soiled wash thereto even on breast and belly, as contrasted with the uniform clear ashy white of *palustris*. Average measurements of three adults from St. Mary's, Ga.: total length, 255 mm.; tail vertebræ, 118 mm.; hind foot, 30 mm.; ear from crown, 15 mm. Of five males from Gainesville, Fla. (from type locality of *natator*, *vide* Chapman): total length, 286 mm.; tail vertebræ, 136 mm.; hind foot, 33 mm.

It will be seen by above figures that the difference in length consists chiefly in the great *relative* lengthening of the *tail*, the body being not

much larger than in *palustris*. In the specimens from Georgia sent me by Mr. Bangs the largest male skull measures only 26 mm. in basilar length by 17 mm. in zygomatic breadth, though the specimen from which this skull was taken is 20 mm. longer than average *palustris*. This illustrates the tendency of the southern animal to elongate in body without corresponding increase in size and caliber.

3. Bangs' marsh mouse, *Oryzomys palustris coloratus* Bangs.

1898 *Oryzomys palustris coloratus* Bangs. *Proc. Bost. Soc. Nat. Hist.*
Vol. xxviii, p. 189.

1901 *Oryzomys natator floridanus* Merriam. *Proc. Wash. Acad. Sci.*
Vol. iii, p. 277. (Monroe County, Fla.)

Type locality: Cape Sable, Florida.

Geographic distribution: Tropical life zone of southern Florida, south of Caloosahatchee River and Lake Worth.

Habitat: Not given; probably similar to that of its allies.

Description of species: From Bangs: "Upper parts rich, reddish brown, about between hazel and ferruginous. . . . Under parts white, often suffused with cinnamon. . . . Skull similar to that of *O. palustris natator*, but slightly larger."

Mr. Bangs gives much stress to cranial differences between *coloratus* and "*natator*" = *oryzivorus* and *palustris*, some of which are rather exaggerated, and that of the greater size of the supraorbital bead in *oryzivorus* is not held out by my New Jersey series. He admits the greater slenderness of the skull in southern examples. Consonant with this I find the supraorbital bead to be no more pronounced in these, if anything less heavy than in Georgia examples. Measurements (*vide* Bangs): total length of three adult males, 301 mm.; tail vertebræ, 142 mm.; hind foot, 34.93 mm.

No cranial measurements are given by Mr. Bangs. I include Dr. Merriam's *O. natator floridanus* as a synonym. He seems to have omitted *coloratus* entirely in his recent synopsis. The small size of *floridanus* given by Merriam is puzzling.

In conclusion I may acknowledge my indebtedness to Mr. Outram Bangs for loan of specimens of *Oryzomys* from South Carolina and Georgia.

AUDUBON, CAMDEN COUNTY, N. J.,

April 14, 1902.